

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

DESCRIPTIONS OF SOME CONIFER FEEDING
APHIDS FROM NEW ENGLAND

BY F. C. HOTTES

The aphids described in this paper were sent me for determination by A. E. Brower of Augusta, Maine and Louise M. Russell of the United States National Museum.

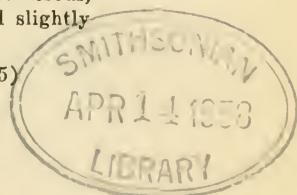
Cinara rigidae n. sp.

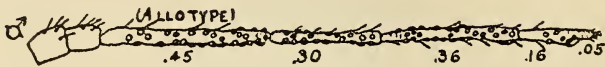
Alate viviparous female.

Length from vertex to end of cauda varying from 1.50-2.40 mm. Color notes taken from living specimens not available. When alive most likely black, at least very dark. Color as indicated from cleared mounted specimens as follows: head and thorax deep brownish-black, abdomen brown with the cornicles slightly darker than the abdomen, distinctly dusky. Cauda with outer margin blackish, anal plate black. First and second antennal segments concolorous with head, third antennal segment with basal one fourth pale remainder of segment dark brown, remaining antennal segments quite similar. Segments of all legs a uniform dark brownish-black. Third segment of rostrum spotted except for apical region which is brown, remaining segments of rostrum brownish-black.

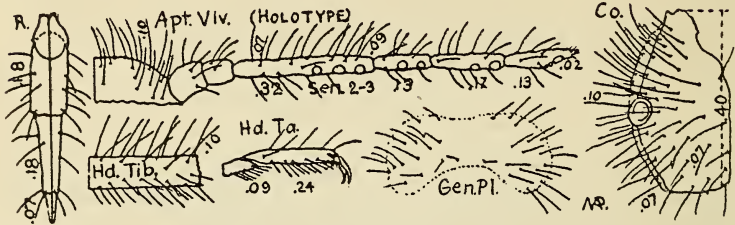
Head and thorax.—Ocular tubercles present, small, difficult to differentiate. Median transverse suture well developed, black. Hairs on vertex of head about .07 mm. in length. Hairs on dorsum of head extending to posterior margin, becoming progressively shorter front to rear, all arising from clear areas around base, which makes the dorsum appear to be covered with small light spots. Antennal segments with the following lengths: III .24-29 mm., IV .14 mm., V .17-20 mm., VI .13-.15 + .04 mm. Sensoria distributed as follows: III two to four secondary plus primary, IV one to two secondary plus primary, V one secondary plus primary. All sensoria arranged in a straight row. Hair on antennae fine, set at an angle of about forty-five degrees or slightly more, about .05 mm. in length. Hairs on fourth, fifth and sixth antennal segments slightly longer than those on the third. Rostrum extending beyond apex of abdomen, in one case segments three four and five doing so. Lengths of last three segments of the rostrum as follows: .21, .23 and .10 mm. The fourth segment of the rostrum is quite narrow.

Metathoracic femora varying from .60-.75 mm. Metathoracic tibiae varying from 1.16-1.28 mm. Hairs on metathoracic tibiae fine, numerous, set at an angle of about forty-five degrees on inner margin and slightly

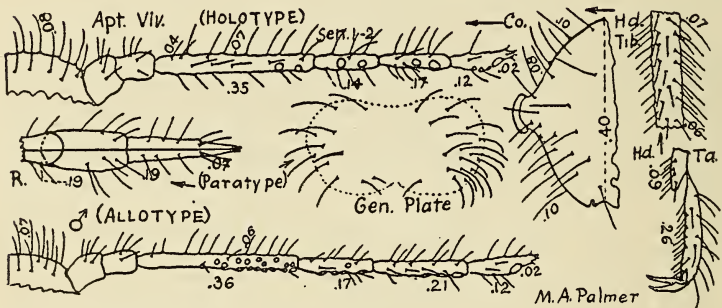




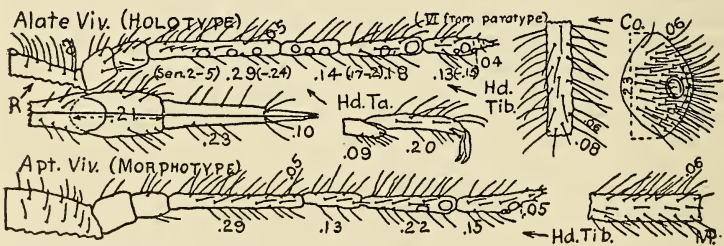
Cinara soplada H.



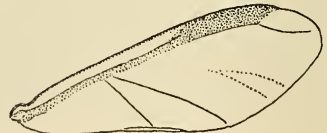
Cinara atripes n.sp.



Cinara pallidipes n.sp.



Cinara rigidae n.sp.



more on outer. The inner margin of the tibiae has the hairs slightly more numerous than the outer, where the hairs are from .06-.08 mm. in length. Length of metathoracic tarsal segments I and II .09 and .20 mm. The first metatarsal segment has about nine hairs on its ventral surface. The media is once branched, the branch being far removed from the margin of the wing.

Abdomen.—Cornicles not always easy to differentiate from abdomen because of similarity of color in some cases, and never differing greatly. Width of cornicles from front to rear varying from .20-.30 mm. the outer margin being quite regular. Hairs on cornicles evenly spaced and of about the same length, being .06 mm. long. Genital plate visible in only one case, and almost totally free from hair. Pigment spot anterior to cauda most likely entire but extremely difficult to differentiate. Cauda pale except for outer margin which is dark due to blackish setulae, the dark portion of the cauda has long hairs.

Apterous viviparous female.

Length 2.40 mm. Length of metathoracic femora .75 mm. Length of metathoracic tibiae 1.07 mm. Cornicle very difficult to differentiate from abdomen because of similarity in color, possibly .18 mm. in diameter. Length of antennal segments as follows: III .29 mm., IV .13 mm., V .22 mm., VI .15 + .05 mm. Third antennal segment without sensoria, fourth antennal segment with only the primary sensorium, fifth antennal segment with one secondary sensorium and the primary. Color in life probably black. Femora and tibiae dark with the basal portions not quite as dark as the apical portions. Hairs on tibiae quite similar to those of the alate viviparous female except for the fact that the hairs on the inner and outer margins are set at the same angle, and are of about the same length. Ventral surface of first metatarsal segment with about nine hairs. Mesosternal tubercle not present.

Hairs on dorsal and ventral surfaces of the abdomen about the same as to length and number, numerous on both surfaces. Pigmented spot anterior to cauda difficult to differentiate, probably divided, in either case with a single row of hairs on the posterior margin.

This species may be easily distinguished from *C. strobis* (F) by the much shorter femora and tibiae, by the hairs on the tibiae being finer, shorter and more upstanding, differently shaped cornicles, and shorter antennae.

Holotype atate viviparous female, morphotype apterous viviparous female. Both types deposited in the United States National Museum. Host *Pinus rigida*. Durham, New Hampshire. July 23, 1921. Collected by Philip R. Lowry and presented to the United States National Museum by Doris Gallup Lowry in 1932.

Cinara atripes n. sp.

Apterous viviparous female.

Length from vertex to end of anal plate varying from 1.67-2.25 mm. Color notes taken from living specimens not available, probably black or blackish-brown. Mounted and cleared specimens indicate the head and thorax as dark dusky-brown. First and second antennal segments concolorous with head, third segment light dusky on basal half, remainder of segment and remaining segments dark dusky, growing pro-

gressively darker towards the apex of the antennae. Femora tibiae and tarsal segments of all legs, with the exception of a short distance near the base of the metathoracic femora which is pale, a uniform very dark brownish-black. Cornicles brownish-black. Cauda and anal plate the same.

Head and thorax.—Median transverse suture well developed, black. Ocular tubercles not discernable. Hair on vertex of head .10 mm. in length. Length of antennal segments as follows: III .32 mm., IV .13 mm., V .17 mm., VI .13 + .02 mm. Secondary sensoria distributed as follows: III 0-2 secondary plus primary, IV and V one secondary plus primary. Hair on antennae sparse upstanding, on third segment varying from .07-.09 mm. much more numerous on anterior margin than on posterior margin. Rostrum in larger specimens reaching to orifice of cornicles, in smaller specimens reaching end of abdomen, last three segments of rostrum with the following lengths: .18, .18 and .07 mm. The third segment of the rostrum is free from spots, its basal region is pale, its apex brown, which color continues to the end of the rostrum. The metathoracic femora vary from .75-.78 mm. in length, the hairs on the anterior margin of this segment are about .075 mm. in length, they are quite numerous and upstanding. The metathoracic tibiae vary in length from 1.08-1.17 mm. the hairs on the outer margin of this segment are .10 mm. in length, they are upstanding. The hairs on the inner margin of the metathoracic tibiae are about as long as those on the outer margin but more numerous, and somewhat more inclined. First metathoracic tarsal segment .09 mm. in length, the hairs on ventral surface of this segment number about nine, they are about as long as the width of the segment.

Abdomen.—Cornicles with the diameter measured front to rear .40 mm. orifice near center, outer margin irregular, but not distinctly broken. Hairs on cornicles not numerous but covering entire surface. Hairs on dorsal surface of abdomen not as numerous as those on ventral surface. Pigmented spots anterior to cauda with hairs scattered over all of surface. Anterior to these spots there are two pigmented areas. Cauda and anal plate with numerous hairs.

Holotype apterous, viviparous female deposited in the United States National Museum. Host *Picea glauca* (white spruce) Topsfield, Maine July 8, 1956. Collected by A. E. Brower.

This species differs from *C. soplada* H. by having longer hairs on the tibiae and antennae, darker pro and mesothoracic legs, larger cornicles. From *C. acadiana* H. this species differs by having longer hairs on the tibiae, more rounded cornicles with the margin less broken.

Cinara pallidipes n. sp.

Apterous viviparous female.

Length from vertex to end of cauda 2.18 mm. Color notes taken from living specimens not available. As present in cleared mounted specimens as follows: Head and thorax dark dusky brown. First and second antennal segments concolorous with head. All of third antennal segment except the extreme apex light dusky, apex of third and all remaining antennal segments dusky. All femora with basal portions much lighter than apical portions which are brown. Tibiae with knees brown, this region followed by a wide pale band which shades into dark brown slightly beyond the middle of the segment on the metathoracic pair of

legs, this band is much wider on the mesothoracic tibiae. Tarsal segments brown. Apex of second rostral segment brown, remaining segments of the rostrum the same. Basal portion of second rostral segment not spotted. Cornicles dusky black, cauda and anal plate likewise.

Head and thorax.—Median suture of head hardly apparent, not dark. Hairs on vertex of head .08 mm. long, fine. Ocular tubercles poorly developed. Rostrum extending to point just beyond posterior margin of cornicles. Length of antennal segments as follows: III .35 mm., IV .14 mm., V .17 mm., VI .12 + .02 mm. Secondary sensoria distributed as follows: Third and fourth antennal segments with one secondary sensorium plus primary, fifth antennal segment with two secondary sensoria and primary. Antennal hair sparse, fine, upstanding varying in length from .04-.07 mm. Sixth antennal segment slightly imbricated. Mesosternal tubercle absent. Metathoracic femora .93 mm. in length, provided with numerous fine upstanding hairs on the anterior margin which are about .06 mm. in length. Metathoracic tibiae 1.40 mm. in length. Hairs on outer margin of metathoracic tibiae varying from .06-.07 mm. in length, fine, upstanding, remaining hairs on metathoracic tibiae not quite so long less upstanding, more numerous. Hairs on inner apex of metathoracic tibiae abundant. First metatarsal segment .09 mm. in length, ventral surface of this segment with about fourteen hairs. Second metatarsal segment .26 mm. long.

Abdomen.—Cornicles with margins slightly irregular with the width .40 mm. Hairs on cornicles not numerous, varying in length from .08-.10 mm. fewer hairs near margin than on restricted area. Hairs on dorsum of abdomen not numerous, similar to those on the cornicles, hairs on ventral surface of abdomen more numerous than those on the dorsum, but only about half as long. Pigmented areas anterior to cauda with similar pigmented areas anterior to them. Hairs on pigmented spots irregular in distribution. Cauda and anal plate with setulae very well developed, both structures with many hairs.

Apterous male.

Length 1.87 mm. Length of antennal segments as follows: III .345 mm., IV .17 mm., V .21 mm., VI .12 + .02 mm. Length of metathoracic femora .81 mm. Length of metathoracic tibiae 1.25 mm. Length of metathoracic tarsal segments .075 and .22 mm. Width of cornicles front to rear .30 mm. Length of hairs on outer margin of metathoracic tibiae .045 mm. Lengths of last three rostral segments .18, .15, .06 mm. Sensoria on antennal segments distributed as follows: III 13-16, arranged on apical half of segment, irregularly spaced, small, tuberculate. IV 5 arranged on posterior margin. V 3. Hairs on antennal segments few, upstanding, varying in length from .04-.06 mm. Median transverse suture of head well developed, brown, much darker than head. Rostrum extending almost to pigmented spots anterior to cauda. Hairs on cornicles evenly distributed similar in length and character to those on dorsum of abdomen. Hairs on ventral surface of abdomen more numerous than hairs on dorsum, somewhat shorter and finer. Harpagones with a few short hairs at the apex but with numerous hairs elsewhere, all of which arise from clear areas. Hairs on tibiae similar to those of apterous viviparous female.

Holotype, apterous viviparous female, allotype apterous male. Host,

Picea glauca (white spruce). Collected at Topsfield, Maine July 8, 1956 by A. E. Brower. Both types deposited in the United States National Museum.

This species appears to be allied to *Cinara atripes* described herewith, but differs from that species by having shorter less numerous hairs on the antennae and tibiae, by having the tibiae banded with a pale area, and by having fewer hairs on the cornicles, which are also quite similar in color to the abdomen. July eighth would appear to be very early for the taking of a male, a fact which indicates that few generations of this species are produced in a season in the type locality, and which may also explain why this species has not been observed and described before now.

Cinara soplada H.

Alate male.

Length from vertex to end of cauda 1.92 mm. Length of antennal segments as follows: III .45 mm., IV .30 mm., V .36 mm., VI .16 + .05 mm. Length of metathoracic femora 1.20 mm. Length of metathoracic tibiae 1.98 mm. Length of metathoracic tarsal segments .105 and .27 mm. Width of cornicles .12 mm. Last three segments of the rostrum with the following lengths: .225, .18 and .06 mm. Sensoria distributed as follows: III 39-48, IV 36-46 V 29-33 VI 6. All of the sensoria are tuberculate and vary in size. Primary sensoria on the third and fourth segments similar to the secondary sensoria on these segments. Antennal hair sparse, most likely due to the excessive amount of surface taken up by the sensoria, most numerous on the fifth segment. All antennal hairs fine and about .03 mm. in length. First and second antennal segments dark dusky, third antennal segment with the base pale, remainder of segment dusky, all remaining antennal segments dusky becoming progressively darker towards the apex. Surface of antennae not taken up by sensoria rough, with the sixth segment distinctly imbricated, and the surface of the fifth slightly so. Rostrum extending beyond the body. Media of fore wings twice branched, the second branch far removed from the margin of the wing. All tibiae uniformly dark dusky. Metathoracic tibiae with the hairs set at an angle of about forty-five degrees, fine, about .045 mm. in length, the same on the outer and inner margins. Hairs on ventral surface of first metatarsal segment numerous, extending throughout most of length. Cornicles with comparatively few hairs. Cauda triangular. Harpagones with a few short hairs near the ends, remainder of harpagones with long hairs.

Allotype alate male, deposited in the United States National Museum. Host, *Picea glauca* (white spruce), Bar Harbor, Maine December 9, 1956 Coll. A. E. Brower.